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TERMINATION OF THE NEW YORK HEALTH DEMONSTRATIONS

Review of Cattaraugus County Program in Publication

EIGHT years after its inauguration, the New York Health Demonstrations project, as such, terminated on December 31, 1930. In accordance with the statement made in the July, 1930, *Quarterly Bulletin*, where experiences of the demonstrations were summarized, both the rural and urban demonstrations officially ended. In both Cattaraugus County and Syracuse local agencies have assumed the maintenance of the health activities growing out of the demonstrations and the Fund's future cooperation in these localities will be confined to the support of special research or other experimental projects growing out of the local demonstration experiences.

The metropolitan demonstration will continue as an individual project. In future issues, the *Quarterly Bulletin*, which in the past has been devoted largely to subjects growing out of the demonstrations, will be devoted to matters relating to the Fund's general interests.

That Cattaraugus County intends to continue pointing the way toward adequate financing for public health, even though the demonstration is at an end, is indicated by the fact that within recent weeks the Board of Supervisors voted to increase the budget for the Cattaraugus County Board of Health. The budget for 1931 now stands at $87,000, one-half of which will be returned to the County Treasury in the form of State Aid. Of the total, $15,000 is designated for the County Laboratory and $72,000 for the other activities of the Department of Health. The increase in public funds over the amount voted for 1930 amounts to $21,000. Inasmuch as several other county department budgets were curtailed seriously, the increase voted for the Department of Health seems doubly significant.

The County Board of Supervisors indicated its reasons

EARLY publication of *Health on the Farm and in the Village*, a review of the Cattaraugus County Health Demonstration, written by Professor C.-E. A. Winslow and based on a survey conducted by a group of specialists under his direction, is announced in this issue concurrently with announcement of the termination of the New York Health Demonstrations project. The Board of Supervisors of Cattaraugus County recently authorized an increase in the local county budget for public health work from $66,000 in 1930 to $87,000 in 1931.

¶ With the close of the demonstrations, the *Quarterly Bulletin*, which in the past has been devoted largely to subjects growing out of these projects, will be given over chiefly to matters relating to the Fund's general interests.

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for this continued support of the County's health activities in a formal resolution, copies of which were addressed to the County Board of Health and to the Board of Directors of the Milbank Memorial Fund. The text of this resolution follows:

"RESOLVED: That the Board of Supervisors has noted with satisfaction the progress in health promotion made in Cattaraugus County during the past year. The decrease in deaths among infants is one outstanding result of the health conservation program, and together with the record of lives saved from diphtheria, tuberculosis, and certain other diseases constitutes a record seldom, if ever, before reached in a rural county.

"The Board of Supervisors recognizes that health service has been rendered to the people of the County far beyond the limit of their official appropriation and for this the Board would express its thanks and appreciation to the Milbank Fund which has provided funds through local agencies to make this possible.

"While it has been necessary this year to decrease other important appropriations, this Board has continued the pre-

THE goal of the Diphtheria Prevention Commission of the New York City Department of Health is to make the great metropolis diphtheria-free. The progress which has been made since January, 1929, toward the realization of this end is recorded in this issue in the article, "New York City's Diphtheria Campaign." ¶ The Division of Research of the Milbank Memorial Fund has attempted to measure the results to date of the anti-tuberculosis activities in Cattaraugus County in terms of case-finding, supervision of active cases, and fatality and mortality rates from the disease. The article on page 9, "Some Results of Tuberculosis Administration in Cattaraugus County, New York," summarizes some of the findings of this study.

vious appropriation for health work as a genuine indication of its confidence in this work.

"The Board sincerely thanks the Milbank Memorial Fund for the assistance and aid given during the past eight years in establishing the various agencies for the welfare of the people of this County.

"Health on the Farm and in the Village," a review and evaluation of the Cattaraugus County Health Demonstration, by C.-E. A. Winslow, professor of public health, Yale School of Medicine, is now in press. The analysis represents an objective review by Professor Winslow of the Cattaraugus County program, as well as his summary of the main conclusions of the individual reports of a staff of experienced investigators, including Professor Ira V. Hiscock, of the department of public health of Yale University; Dr. H. R. Edwards, director of the division of tuberculosis of the Department of Health, New Haven, Connecticut; Miss Katherine Tucker, director of the Visiting Nurses Society of Philadelphia; Miss Margaret F. Byington, research consultant for the Russell Sage Foundation; and Dr. F. K. Shuttleworth, department of education of Yale University. This volume of approximately 275 printed pages may be ordered through The Macmillan Company, New York, price $1.00 postpaid.

In this account of the Cattaraugus County experiences, emphasis has been placed upon the application of the principles and techniques of the program to rural health problems in general. The author has subjected the Cattaraugus County program to an impartial review and criticism. He reports the limitations, the shortcomings, and the mistakes of the program, as well as its outstanding successes.

Professor Winslow's general conclusions, therefore, are of particular significance. They are, that the Cattaraugus

County demonstration, like other human enterprises, was not perfect, but that "it was conceived with remarkable soundness and in the main executed with efficiency and economy," and "represents one of the most effective and inspiring contributions made to the cause of rural public health anywhere in the world." The chapter headings are as follows:

In considering the statistical results of the demonstration, Professor Winslow states that a saving in the County of fourteen lives a year from tuberculosis is a very modest estimate of the achievement of this part of the program. He declares likewise that in the County there has been a saving of twenty infant lives a year and five lives a year from diphtheria during the period of the demonstration. Admitting that such computations tell only a small part of the story of the services of the demonstration, the author declares that in these three groups alone, there has been a saving of life capital worth to the community $300,000 a year, or more than double the cost of the entire County health program.

A SIMILAR critical review and evaluation of the program of health work in Syracuse is contemplated. The Syracuse Department of Health has a very creditable record of achievements. The City was awarded first place for excellence of health administrative practices among cities with a population ranging from 100,000 to 500,000 entering the 1929 Inter-Chamber Health Conservation Contest conducted by the United States Chamber of Commerce and the American Public Health Association.

The course of the tuberculosis death rate in Syracuse (including Syracusans dying in Onondaga Sanatorium) has been practically on a level since 1921, although the corrected rate of 57.5 in 1929 is the lowest corrected rate ever recorded, and it is anticipated that the 1930 rate will be even lower.

Intensive campaigns have been carried on each year for the immunization of children against diphtheria. The first death from this disease in eleven months was recorded in April, 1930—that of a child who had not had immunizing treatments. Before immunization was begun in 1923, there had never been more than two consecutive months without a diphtheria death. In each of the years 1916, 1917, 1920 and 1921 there was only one month without a death from this cause. In 1922 there were deaths from diphtheria in every month of the year.

A complete program for child welfare has been centered under the director of the Bureau of Child Hygiene. The interest shown by mothers in bringing children to the well-baby conferences at an early age is undoubtedly a factor in the maintenance of the unusually low infant mortality in Syracuse. The death rate of Syracuse children under one year of age for the first eleven months of 1930 indicates that the rate for 1930 will be approximately the same as the rate of 55.7 in 1929, which was the lowest on the Department's records.

The recognition by the Common Council of the work of the Health Department, as shown by their increasing appropriations for this service each year, is outstanding evidence that the citizens of Syracuse know the value of public health work and are willing to support it. The budget adopted by the Council for the work of the Department has increased from $144,000 in 1923, the year the urban health demonstration was inaugurated, to $314,000 in 1930.

WHEN organized, the metropolitan health demonstration, while projected as an official undertaking centered under the leadership of the New York City Department of Health, was virtually a private enterprise, its policies being initiated by the governing body, the Community Health Council, of which the Health Commissioner was chairman. As the program was proved practical, however, the Health Department has taken an increasing share of responsibility for the development of activities and in 1931 the Health Department is assuming a large portion of the management of the demonstration.

One of the most important activities of recent months in the Bellevue-Yorkville district has been a social hygiene campaign, launched in October. The campaign has overstretched local boundaries in interest, having been the subject of wide newspaper and magazine comment.

Through its financial assistance to the Bellevue-Yorkville Health Center, the East Harlem and Judson health centers, and similar projects, the Fund has cooperated with other voluntary organizations in demonstrating to the official health authorities in New York City the value of the local health center as a means of improving community health. One outcome of this was the appointment in 1928 by Dr. Shirley W. Wynne, commissioner of health in the City, of a Committee

on Neighborhood Health Development which, following an extensive study, submitted a program which, having been subsequently endorsed by Mayor James J. Walker, was made the basis of a request by Dr. Wynne for the establishment of twenty health centers in the City. The Board of Estimate and Apportionment approved the program and authorized the expenditure in 1931 of $1,000,000 to be used for the purchase of sites and the erection of four of these centers.

Another important outgrowth of the metropolitan health demonstration has been the city-wide activities of the Diphtheria Prevention Commission of the City Department of Health, which, during its first year of operation, succeeded in securing the immunization of over 200,000 City children.

As was pointed out in the July, 1930, *Bulletin*, both by virtue of its later organization and because of a greater concentration of the Fund's interests in health programs in New York City, support of the Bellevue-Yorkville Health Demonstration is being continued in 1931.

SOME RESULTS OF TUBERCULOSIS ADMINISTRATION IN CATTARAUGUS COUNTY, NEW YORK

A summary of a study made by the Division of Research of the Milbank Memorial Fund[1]

IN attempting to make a statistical appraisal of the results of anti-tuberculosis activities in Cattaraugus County, two important considerations were kept in mind.

The first is that the full effects of most social experiments will not be manifested until considerable time has elapsed. This period of time must be thought of in terms of decades and even of generations rather than of years.

The second consideration is that anti-tuberculosis work, although having the single objective of reducing the prevalence of the disease, comprises a number of activities having varied objectives. These include efforts to prevent minimal tuberculosis; to prevent the development of minimal cases to more serious stages; to arrest advanced cases; and to arouse the community to its responsibility in keeping the arrested cases well.

With these points in mind, an attempt was made to see what measurable results have been attained so far by anti-tuberculosis activities in Cattaraugus County, in terms of case finding, supervision of active cases, and the fatality and mortality rates from the disease.

By way of orientation, it may be pointed out briefly that Cattaraugus County, having a population of approximately 74,000,[2] has had a relatively low death rate from tuberculosis over a long period of time. In 1880 and 1890

[1]The full report will be published in a forthcoming issue of the *American Review of Tuberculosis* and in somewhat briefer form in *Tubercle* (London).

[2]Excluding Indian population estimated as 1,000. Census enumeration showed the Indian population 1,162 in 1920 (XX Census Volume III: 678) and 927 in 1925 (State Census enumeration, 1925).

the death rates from "consumption" were 132 and 108 per 100,000 population respectively.[3] From 1900 to 1923 the tuberculosis mortality declined only slightly with annual rates varying from 85 to 60 per 100,000.[4] A further reduction of the mortality in an area where the tuberculosis death rate was already relatively low becomes an experiment of unusual interest.

Prior to 1923, the anti-tuberculosis work in the County was more developed than in most rural counties. The Cattaraugus County Tuberculosis and Public Health Association was started in 1909 and the county sanatorium was opened in 1916. The superintendent of the county sanatorium conducted clinics at various points in the County and was aided by the tuberculosis nurse and volunteer workers. The annual report of the county nurse for 1920 and 1921 showed an average of 52 clinics held with a total attendance of 235.

The County Bureau of Tuberculosis was organized in 1923 and initiated a program which placed especial emphasis upon (1) an intensive search for cases, (2) supervision of cases with the aid of public health nurses, and (3) education stressing the importance of early diagnosis and sanatorium care. The personnel for carrying out the initial program consisted of a medical director, an assistant medical director, a supervising nurse, and the part-time aid of 12 public health nurses.

I. The Discovery of Cases[5]

Prior to the establishment of the County Tuberculosis Bureau in 1923 the reported cases were only slightly in excess of the deaths each year; since 1924 the number of new cases

[3]Data obtained from U. S. Census 1880, Vol. XII.
U. S. Census 1890, Part IV.

[4]The experience of Cattaraugus in respect to a low death rate from tuberculosis is not unlike that of one or two other rural counties in New York.

[5]All of the data for both cases and deaths presented in this study are exclusive of Indians and of non-residents at the J. N. Adam Memorial Hospital (Buffalo Municipal Sanatorium located in Cattaraugus County).

reported has been on a level of approximately 115 annually, or about four cases to one death.

Records of the annual number of cases, classifiable according to age, form, stage and activity, if comparable from year to year, are pertinent data upon which to base some judgment of the success of case-finding activities. Unfortunately this essential comparability of record in the Cattaraugus County experience is lacking, with the exception of active cases in recent years. In 1924 and 1925 a large number of cases were reported which reflected the results of a round-up; the great majority of these were not diagnosed as active but were chiefly cases whose activity was not recorded. With such a large proportion (48 per cent in 1924) not diagnosed from the point of view of activity, any comparison of the annual distribution of the new cases according to activity obviously would be open to question.

In fact, it appeared that in the course of an intensive case-hunting campaign there was a tendency to make diagnoses of tuberculosis without sufficient anatomical or clinical evidence of disease. A partial review of the cases on the roster in 1930[6] indicated that the diagnosis of tuberculosis in the earlier years of the demonstration had been too liberal, so far as cases originally classified as arrested were concerned.

II. Results of Supervision of Active Cases[7]

The active cases of tuberculosis (all forms) under super-

[6]When Professor C.-E. A. Winslow, of Yale University, undertook a general review of the public health developments in Cattaraugus County the question was again raised by Dr. Herbert R. Edwards who was associated with Professor Winslow on the tuberculosis phases of the review. As the result, Dr. Edwards and Dr. John H. Korns, director of the Bureau of Tuberculosis of the Cattaraugus County Department of Health, undertook a review of the 1930 roster of cases, with such evidence as the records, clinical and other, afforded.

[7]The comments on active cases are based on the records of active cases after eliminating those cases whose diagnosis was "reversed" by Doctors Korns and Edwards in their review of the roster already referred to. The proportion of cases originally classified as active and reviewed whose diagnosis was "reversed" was relatively small, an "error" of only 5 per cent being indicated.

Year	Total Active Cases	No Change	Quiescent	Arrested or Apparently Arrested	Died		In Addition the Number Moved Away
					Tuberculosis	Other Causes	
			Number				
1922	22	9	0	0	13	0	0
1923	43	18	0	2	22	1	2
1924	73	37	5	7	24	0	3
1925	106	56	6	28	16	0	12
1926	151	65	29	31	23	3	8
1927	168	62	34	51	19	2	12
1928	138	46	18	46	24	4	17
1929	125	46	25	35	18	1	12
			Per Cent				
1922	100.0	40.9	0	0	59.1	0	
1923	100.1	41.9	0	4.7	51.2	2.3	
1924	100.0	50.7	6.8	9.6	32.9	0	
1925	100.0	52.8	5.7	26.4	15.1	0	
1926	99.9	43.0	19.2	20.5	15.2	2.0	
1927	100.0	36.9	20.2	30.4	11.3	1.2	
1928	99.9	33.3	13.0	33.3	17.4	2.9	
1929	100.0	36.8	20.0	28.0	14.4	.8	

Change in the condition of all known active cases of tuberculosis as of January first each year in Cattaraugus County, 1922-1929. (All these cases had been under supervision four months or longer.)

vision, shown in the accompanying table, classified as active at or as near as possible to the beginning of each year, have been tabulated according to the change occurring during the year, that is, as to whether the case became quiescent, arrested, or died, or underwent no change in the opinion of the diagnostician. Obviously the larger the proportion becoming arrested and the smaller the proportion dying within the year, the more effective has been the treatment of these cases.[8] In

[8]Provided, of course, that no radical change was made in the standards of diagnosis and classification. In this instance, it does not appear that any such change occurred so far as active cases are concerned; any slight changes could not have affected the results materially.

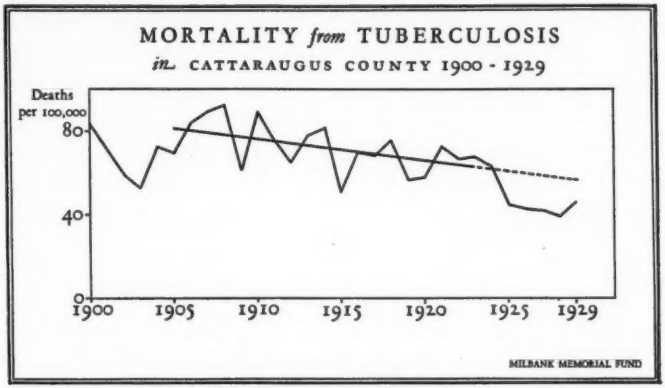


Fig. 1. Deaths from tuberculosis, all forms, per 100,000 population, in Cattaraugus County, 1900-1929. In the diagram, the trend is shown for the annual rates for the period 1905-1922.

1922 and 1923 half of the known active cases died before December 31st, while since 1925 the proportion dying within the year has averaged only 15 per cent. The proportion of cases in which activity ceased within the year has increased from 5 per cent in 1923 to an average of 30 per cent in 1927-1929. Since 1924 a third of the active cases in each year had some sanatorium care.

It is a well known fact that the effectiveness of treatment and supervision of active tuberculosis cases is greatly influenced by the stage of the disease at the time the case is diagnosed. A tabulation of the active cases of adult pulmonary tuberculosis shows the following: (1) the proportion of minimal active cases known in each year has increased from 14 per cent in 1923 to an average of 27 per cent in 1927-1929; (2) more than half of the active cases were classified as advanced in 1922 and 1923 while in the last three years the proportion has been from 20 to 24 per cent; (3) from 50 to 58 per cent of the active cases in each year have been classified as moderately advanced.

The foregoing paragraphs indicate clearly the favorable effects of improved supervision upon the progress of the case as well as upon the mortality. However, the factor of late reporting of cases tends to oppose these results. From six to eleven deaths in each year, during the period 1926-1929, were not known of *as cases* until after receipt of the death certificate, and from five to ten cases were known less than six months before death.[9]

III. Changes in Tuberculosis Mortality

The foregoing discussion of the records of case supervision pointed definitely to a reduction in the fatality of a considerable number of active cases. Obviously this ought to be reflected in the death rate. Such a result is indicated by a change in mortality in the period 1925-1929 from the previous trend as portrayed in Fig. 1. The significance of the decline in tuberculosis mortality in Cattaraugus County in the years 1925, 1926 and 1927, already has been discussed[10] and the mortality experience of 1928 and 1929 has not materially changed the general indications.

If no change in the trend of tuberculosis mortality had occurred subsequent to 1923, we would expect the trend values to decline from 61.2 ± 9.9 in 1925 to 57.1 ± 9.9 in 1929. The actual rates (45.3, 43.7, 42.1, 39.1 and 46.9) from 1925 to 1929 were from 10 to 33 per cent below the expected trend values. Applying the theory of probability to such a problem as this, the occurrence of five successive rates as low

[9]It is fair to point out that from one to three deaths each year (1926-1929) were of non-residents with advanced active disease who were in the County less than four months.

[10]Sydenstricker, Edgar: The Decline in the Tuberculosis Death Rate in Cattaraugus County, Milbank Memorial Fund *Quarterly Bulletin*, April, 1928.

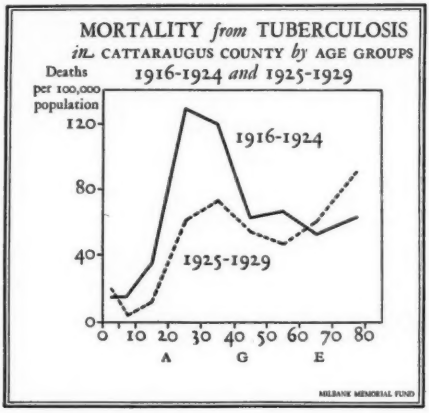
See also comments on Tuberculosis Mortality in the Milbank Memorial Fund's *Annual Reports* for 1926, pp. 77-80; 1927, pp. 51-55; 1928, pp. 58-64.

The occurrence of changes in economic conditions is discussed in the Milbank Memorial Fund's *Annual Report* for 1928, pp. 62 and 63. Close association of variations in tuberculosis mortality and in prosperity cannot be predicated in a rural community such as Cattaraugus County.

as these may be judged as a significant event in the history of tuberculosis in Cattaraugus County. The chances against its occurrence under the same conditions that prevailed in 1905-1923 would be considerably more than one million to one.

Of greater significance than purely statistical tests of the deviation of the actual rate from a predicted trend is the fact that the decrease in the Cattaraugus County tuberculosis death rate has taken place in the younger ages. This fact is clearly indicated by Fig. 2 which compares the mean annual rates for 1916-1924 with those for 1925-1929 at different ages. The rate among children under five years of age is slightly higher in the later period, but the numbers of deaths involved at this age are very few, averaging one per year in the earlier period and slightly more than one in the later period, and the change can hardly be considered significant. On the other hand, a very marked improvement in the mortality of children and adolescents has taken place, the decrease at ages 5-9 being 81 per cent and at ages 10-19, 69 per cent. The percentage decrease of 53 in the age period 20-29 is especially significant since at these ages the mortality reached its maximum in the previous period.

Fig. 2. Deaths from tuberculosis, all forms, per 100,000 population, by age groups in Cattaraugus County, in 1916-1924 and in 1925-1928.



The validity of the officially recorded tuberculosis death rate is discussed in some detail in the report. Although complete correction for residence by Dr. Joseph V. DePorte, director of the Division of Vital Statistics of the New York State Department of Health, for recent years indicated that the rate as corrected for this study was not appreciably affected, it was found that the recorded mortality has been somewhat exaggerated by existing statistical and diagnostic procedures in the classification of deaths, and that, unless such procedures are changed, this exaggeration will tend to increase rather than decrease or remain constant.

The results of this attempt to measure the effectiveness of the anti-tuberculosis activities so far in Cattaraugus may be summarized briefly as follows: the evidence afforded by the records of cases strongly points to the conclusion that the tuberculosis administration already has been effective within certain limits. The development of facilities for discovery, care and supervision of tuberculosis cases has resulted in: (1) an improvement in case-finding activities as shown by an increase in the number of active cases under supervision, by the number of minimal cases discovered, and by a greater emphasis upon the detection of childhood type of tuberculosis; (2) a reduction in the fatality of supervised active cases which has manifested itself in a marked decline in the mortality of children and adolescents. The gross result of this reduction in mortality is seen in a drop in the death rate from tuberculosis during the past five years which is statistically significant in itself.

The report points out, however, that the time has not yet come for a full appraisal of the *ultimate* results of this experiment in rural health work, and that this is true for several reasons. One is that childhood and minimal cases are just being brought under supervision and the effect of this type of

preventive work cannot be seen until several years have elapsed. Another is that the effect of public health education, especially in tuberculosis prevention and care, is not instantaneous but cumulative. The *immediate* results, so far as they can be reflected in mortality experience, of necessity are confined largely to the prolongation of the lives of cases that can respond to supervision and sanatorium care.

The report closes with reference to the fact that the tuberculosis death rate in Cattaraugus County has stayed on practically the same level since 1925, and asks the question: to what is this failure to maintain a further decline due? Is it due entirely to an accumulation of deaths of moribund cases? Were any of the deaths not under supervision of physicians, or of the Health Department, or of both? How much of the mortality occurred among persons who failed to cooperate with physicians or with the Health Department? To what extent were these fatal cases not reported promptly to the Health Department by the physicians and thus did not secure the benefit of the anti-tuberculosis facilities?

"No precise judgment can be made of the possible effect upon the death rate by an unusual accumulation of moribund cases," says the report. "There is every reason to believe that there has been a postponement of the deaths of a specific moiety of the cases due to the introduction of better methods of tuberculosis control. How large it is or exactly how long it will last, is neither statistically predictable nor certain from the point of view of a clinical prognosis. The facts that of the 127 deaths occurring in 1926-1929, 22, or 17 per cent, were of cases that had been under observation three or more years, and 29 more, or 23 per cent, had been under observation from one to three years may be suggestive. Further experience must be awaited before a clearer answer can be sought.

"More definite, although only partially complete, answers

to the other questions raised, can be made from a study of the rather careful socio-medical histories secured by Dr. Korns on all deaths that were officially ascribed to tuberculosis in the County in 1928-1929.[11] In these two years 64 deaths were so ascribed. Of this number 8 were definitely of persons who were not residents of Cattaraugus County or were of residents of Buffalo who took up residence in Cattaraugus County after treatment at Perrysburg; these 8 deaths may be subtracted from the 64 as not being true liabilities upon Cattaraugus County. In addition, there were 7 deaths for which the diagnosis of tuberculosis was considered doubtful by the Bureau of Tuberculosis; these also may be subtracted. We have left, therefore, 49 tuberculosis deaths of Cattaraugus residents for consideration.

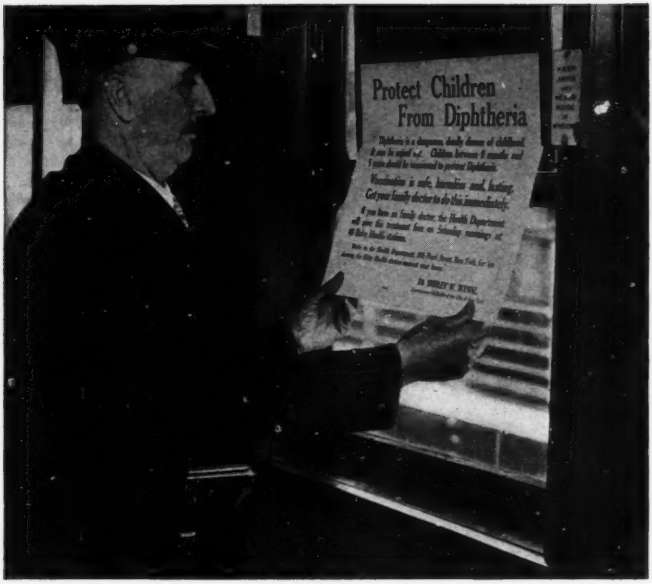
"Now of these 49 deaths, 26 occurred among patients who had been under supervision of the Health Department with the cooperation of the physician for a period of not less than six months. The remaining 23 deaths occurred among persons who had not received any supervision from the Health Department. Of these, 9 may be ascribed to the failure on the part of the physician to cooperate with the Health Department and 12 were either entirely unknown to physicians or the Health Department or refused to cooperate.[12] The indication seems clear that if the same decrease in mortality as occurred among the cases under supervision is to be achieved

[11]Socio-medical histories of tuberculosis deaths were started in 1925 by Dr. William C. Jensen, then director of the Cattaraugus County Bureau of Tuberculosis. The data for 1928-1929 only have been used since records compiled by one person are more comparable in all details.

[12]In addition, there were 2 deaths for which there was record of inadequate service on the part of the Health Department. In one of these cases known to be a contact, no tuberculin test or X-ray was made and the patient was declared to be without manifest tuberculosis upon clinical examination. No "follow-up" of this case was made in spite of the fact that both the brother and the father of the case had recently died from the disease; a diagnosis was made only four months prior to death. The other case was that of the father of 2 boys who had died from tuberculosis and of a girl who had had the disease, no further inquiry having been made into this case until she was found in a dying condition.

among such cases as these, some further improvement in the case-finding machinery and in the cooperation of the private physicians is necessary.

"This fact has been fully realized by the County Health Department and its advisors, and already an experimental project for developing methods of more intensive search for cases, particularly among contacts and school children, has been begun in Cattaraugus County. This project is closely coordinated with an epidemiological study of tuberculosis that is now under way."



NEW YORK CITY'S DIPHTHERIA CAMPAIGN

by EDWARD F. BROWN

Director Diphtheria Prevention Commission

THIRTY-SIX years ago, a municipal laboratory produced and distributed antitoxin for the first time. That municipal laboratory was in the City of New York. Fifteen years ago, that same laboratory was the first in this country to produce toxin-antitoxin to immunize those who are susceptible to diphtheria.

Yet it was not until twenty-three months ago—in January 1929—that the City of New York, first in the production and distribution of antitoxin, first in the production of toxin-antitoxin, made a determined, organized effort to wipe out

diphtheria through the preventive measure perfected by its own scientist, Dr. William H. Park.

The Diphtheria Prevention Commission, formed by Health Commissioner Shirley W. Wynne, and financed in the main by the Milbank Memorial Fund, has been the determined, organized effort of the New York City Department of Health to make the great metropolis diphtheria-free.

Progress has been made toward the realization of the latter goal.

That public health is purchasable is no better illustrated than by the example of the diphtheria campaign. The effort to wipe out this disease of childhood has meant money—but when one considers how many lives have been saved, and how many cases have been prevented, it is a demonstration that investments in public health work can be made to yield handsome returns.

But now, at the end of twenty-three months, one question is of the most vital interest: What are the results?

In analyzing the results of a diphtheria campaign, it must be remembered that a child is not rendered immune to diphtheria until six months after the third and final injection of toxin-antitoxin. The campaign started in January of 1929. The first six months of that year, therefore, could not have been expected to show any decrease in incidence or mortality from that cause.

The Diphtheria Prevention Commission is not unmindful of the cyclic recurrence of periods of high diphtheria prevalence—periods which, according to Edgar Sydenstricker, director of the Division of Research of the Milbank Memorial Fund, average about six and a half years in the experience of New York City. As shown in the chart (Fig. 1) prepared by this investigator, and published in the Health Department's *Weekly Bulletin*, this shows that 1927 marked the

crest of the wave and that 1930 might be expected to show a low incidence of diphtheria.

The accompanying table gives the cases and deaths from diphtheria for the period 1914 to 1930 which comprises more than two complete cycles. It will be seen from this table that the figures for 1930 fall considerably below the lowest trough ever recorded during the periods indicated.

Diphtheria cases and deaths in New York City, 1914-1930.

Years	Cases	Deaths
1914	17,129	1,491
1915	15,279	1,278
1916	13,521	1,031
1917	12,624	1,158
1918	11,454	1,245
1919	14,014	1,239
1920	14,166	1,045
1921	15,110	891
1922	10,427	873
1923	7,850	553
1924	9,687	714
1925	9,051	663
1926	7,531	477
1927	13,507	717
1928	10,776	642
1929	8,548	463
1930	3,493*	187*

*11 months' figure.

The years 1923-1926 inclusive were years in which the cyclic curve was low; they represent the trough of the wave. Bearing this in mind we ought, in fairness, to compare the incidence of diphtheria in 1929 and 1930 with that prevailing in these low years. The comparison on page 24 is of interest.

This table indicates that in none of the four low years here shown have any such favorable records been attained as have prevailed since the middle of 1929. In fact never before has the City enjoyed such low rates as it has during the past eighteen months.

It might be well to mention at this point that of the 187 children who have been victims so far this year, not one had been given the full toxin-antitoxin treatment which consists of three injections of toxin-antitoxin, followed by a negative Schick test at the end of six months, the time required to develop full protective powers.

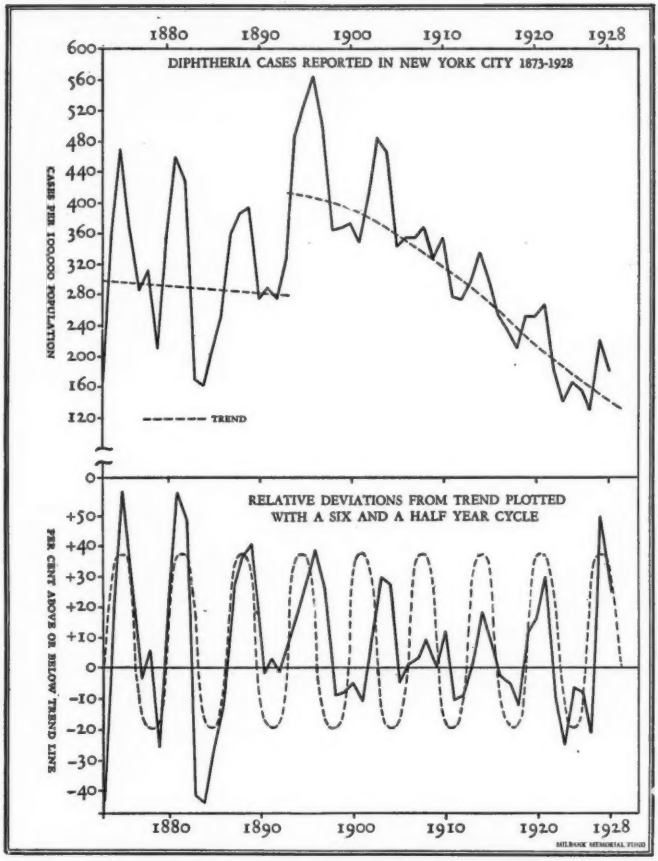


Fig. 1. Cyclical variations in diphtheria incidence in New York City from 1873 to 1928. In the upper graph, the reported annual incidence is shown and the general trend for the period is indicated by the smoothed line which was drawn by inspection. The percentage deviation each year from this trend is shown in the lower graph, and these variations are compared with a six-and-a-half-year cycle.

To conduct an intensive campaign against diphtheria or any other preventable disease, a program of health educa-

Year	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
1923	2,185	190	2,335	158	1,227	76	2,103	129	7,850	553
1924	2,760	231	3,178	210	1,651	106	2,098	167	9,687	714
1925	2,720	190	3,336	262	1,281	94	1,714	117	9,051	663
1926	1,877	118	2,111	141	1,336	84	2,207	134	7,531	477
1929	2,800	170	3,371	156	1,052	55	1,325	82	8,548	463
1930	1,375	82	1,237	57	518	30				

Diphtheria incidence in New York City in years of low prevalence.

tion must be inaugurated so that the public can understand what it is all about. It is one thing to plan a public health campaign in New York, and another thing—a much more difficult thing—to carry it through. For New York is not comparable to other communities. Its problems are different and more complex. There is a foreign-born population that within itself makes up a number of small cities. A campaign in a city like New York must be so directed as to make its appeal to 7,000,000 people of different intellectual levels.

The chief problem of the Commission was to convince the mothers and fathers of the need and efficacy of the toxin-antitoxin treatments. Effective health education was required to arouse the parents to action—and arousing them to action meant getting them to go to their family doctor or to the Baby Health Stations of the Department of Health.

How the Diphtheria Prevention Commission "aroused" the parents to action may be gleaned from such outstanding examples of educational publicity as these:

In cooperation with the transit companies, over 100,000 placards have appeared, at three different times during the campaign, in the subways, the surface cars, the elevated, the buses and the ferries. It is estimated that 8,495,205 fares

a day ride in these vehicles and some time or other presumably saw the diphtheria notices.

To advise each mother, as her child becomes nine months old, that the child should be immunized, calls for the mailing of approximately 10,000 personalized letters a month.

In cooperation with Cardinal Hayes, a special pastoral letter issued by him was distributed into 400,000 Catholic homes in this City in which His Eminence warned against the dangers of diphtheria and advocated the use of toxin-antitoxin. Bishop Molloy of the Diocese of Brooklyn gave similar assistance. The message was read from every Catholic altar.

To reach the foreign-born population has required the translation of diphtheria literature into ten predominant foreign tongues, and the occasional writing of stories for thirty-six daily newspapers and eighty-three weeklies and semi-weeklies, all printed in foreign languages.

Twenty-four sheet posters and three-sheet posters were displayed on billboards throughout the City. New York's department stores gave generously of their advertising space; the chain stores gave prominent display to specially prepared posters.

More than 17,000 children were immunized during the summer of 1929 through six "Healthmobiles"—clinics on wheels—which toured the congested sections of the City, the parks and beaches where children gathered in large numbers.

Three of the largest moving electric signs in the world were utilized for the diphtheria message; a huge painted sign—over 200 feet long and 20 feet high—broadcast our appeal from the roof of a building at Broadway and 23rd Street.

Some four million pieces of literature have been given wide

distribution; the radio, the newspaper columns, the "talkies" have all been utilized.

Because it was the guiding policy of New York's diphtheria campaign that insofar as was consistent with the public health, the work of immunizing children was to be done by private physicians, the Commission carried on an educational campaign directing people to private doctors to overcome the ethical prohibition against a doctor's beckoning to practice. In every piece of literature, in every spoken address the public was advised to go to the family doctor for treatment.

Circulars, signed jointly by the Department of Health and the cooperating county medical societies were distributed to the 12,000 private physicians to be mailed by them to families in their practices with children under ten. Waiting room cards, directing the attention of the parents to the need of protecting their children without delay were distributed, in cooperation with the medical societies, for permanent posting in their reception rooms.

Then there was the experiment of fixing a flat fee of six dollars for the three toxin-antitoxin treatments. In cooperation with the Medical Society of the County of New York and the Bronx County Medical Society, 7,225 physicians in the boroughs of Manhattan and the Bronx were asked to set aside a special day each week for the diphtheria treatments, and further to sign a voluntary agreement in which they pledged themselves on these days to charge no more than six dollars for the three inoculations. More than 41 per cent of the total number solicited agreed to cooperate in this fashion.

This particular experiment, perhaps one of the most revolutionary ever undertaken in the modern practice of medicine, was the result of the Commission's endeavors to ar-

range for a reasonable fee for the parents of moderate means and to draw them away from the baby health stations which are intended only for the poor.

Innumerable requests have come from all parts of the United States as well as from all over the world—to be exact, from twenty-nine states and from twelve foreign countries—asking for detailed information regarding the diphtheria campaign, for assistance in conducting similar campaigns in other communities, for copies of the publications of the Diphtheria Prevention Commission, and for permission to reproduce cuts, cards, letters, posters, leaflets, et cetera.

The Diphtheria Prevention Commission was the recipient this year of the 1930 Harmon Award for the "complete record of a well planned and executed program covering a year's work in publicity carried on by a public or private agency engaged in social or health work submitted by such an agency in a city or county of 200,000 or more population."

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